

**Asbestos Survey/Inspection**

**For**

**Former Norco Refinery  
FM 2725 & Bishop Road  
Ingleside, Texas**

**Prepared for**

**BNC Engineering, LLC  
607 River Bend Drive  
Georgetown, Texas 78628**

**Prepared by**

**Professional Service Industries, Inc. (PSI)  
3 Burwood Lane  
San Antonio, Texas 78216**

**PSI Project No. 435-4A061**

**September 14, 2004**



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**For**

**Former Norco Refinery  
FM 2725 & Bishop Road  
Ingleside, Texas**

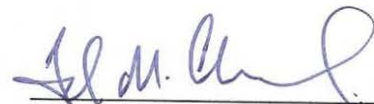
**Prepared for**

**BNC Engineering, LLC  
607 River Bend Drive  
Georgetown, Texas 78628**



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## INTRODUCTION

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Professional Service Industries, Inc. (PSI) was retained by Mr. James Blackwell, P.E. of BNC Engineering, LLC to conduct a survey for suspect asbestos-containing building materials (ACBM) at the former Norco Refinery located at FM 2725 and Bishop Road in Ingleside, Texas. The survey was conducted from August 17 through August 19, 2004. As requested, PSI returned to the site on September 1, 2004, to collect samples of thermal system insulation concealed in garbage bags located in an abandoned control room. The report has been prepared for the exclusive use of BNC Engineering, LLC.

PSI understands that the former Texas Department of Health (TDH) became part of the Department of State Health Services as of September 1, 2004. However, PSI continues to refer to this governing body as TDH in order to comply with the regulations as outlined in the Texas Asbestos Health Protection Rules dated March 2003.

### **Purpose**

The purpose of the survey was to provide general information for the Former Norco Refinery regarding the presence of accessible and/or exposed building materials which commonly contain asbestos.

As directed by the client, PSI did not provide any service to investigate or detect the presence of moisture, mold or other biological contaminants in or around any structure, or any service that was designed or intended to prevent or lower the risk of the occurrence of the amplification of the same. Client acknowledges that mold is ubiquitous to the environment with mold amplification occurring when building materials are impacted by moisture. Client further acknowledges that site conditions are outside of PSI's control, and that mold amplification will likely occur, or continue to occur, in the presence of moisture. As such, PSI cannot and shall not be held responsible for the occurrence or recurrence of mold amplification.

### **Warranty**

The field and laboratory results reported herein are considered sufficient in detail and scope to determine the presence of accessible and/or exposed suspect ACBM in the Former Norco Refinery. Professional Service Industries, Inc. warrants that the findings contained herein have been prepared in general accordance with accepted professional practices at the time of its preparation as applied by similar professionals in the community. Changes in the state of

## INTRODUCTION

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the art or in applicable regulations cannot be anticipated and have not been addressed in this report.

The survey and analytical methods have been used to provide the client with information regarding the presence of accessible and/or exposed suspect ACBM existing at the Former Norco Refinery at the time of inspection. Test results are valid only for the material tested. There is a distinct possibility that conditions may exist which could not be identified within the scope of the study or which were not apparent during the site visit. This inspection covered only those areas which were exposed and/or physically accessible to the inspector. The study is also limited to the information available from the client at the time it was conducted.

No other warranties are implied or expressed.

### **SURVEY METHODOLOGY**

#### **Inspection Procedures**

The asbestos survey was performed by an EPA accredited, Texas Department of Health (TDH) licensed asbestos inspector. An initial walkthrough of the Former Norco Refinery was conducted to determine the presence of suspect materials which were accessible and/or exposed. Materials which were similar in general appearance were grouped into homogeneous sampling areas.

#### **Sampling Procedures**

Following the walkthrough, the TDH licensed asbestos inspector collected samples of selected materials identified as suspect ACM. Sampling was limited to those materials which were accessible and did not involve destruction of walls, other building elements, physical barriers, or the structural integrity of the item being tested.

TDH guidelines were used to determine the sampling protocol. Sampling locations were chosen to be representative of the homogeneous sampling area. While an effort was made to collect samples randomly, samples were taken preferentially from already damaged areas or areas which were the least visible to minimize disturbance of the material.

### **LABORATORY METHODOLOGY**

#### **Method of Analysis**

Analysis was performed by using bulk sample for visual observation and slide preparation(s) for microscopic examination and identification. The samples were mounted on slides and then analyzed for asbestos (chrysotile, amosite, crocidolite, anthophyllite, and actinolite/tremolite), fibrous non-asbestos constituents (mineral wool, paper, etc.) and non-fibrous constituents. Asbestos was identified by refractive indices, morphology, color, pleochroism, birefringence, extinction characteristics, and signs of elongation. The same characteristics were used to identify the non-asbestos constituents.

The microscopist visually estimated relative amounts of each constituent by determining the volume of each constituent in proportion to the total volume of the sample, using a stereoscope.

### **Laboratory Quality Control**

PSI's laboratory maintains an in-house quality control program which consists of blind reanalysis of ten percent of all samples, precision and accuracy controls, and use of standard bulk reference materials.

## INSPECTION REPORT

From August 17 through August 19, 2004, a representative of Professional Service Industries, Inc. (PSI) conducted a visual inspection and sampling survey for the Former Norco Refinery located at FM 2725 and Bishop Road in Ingleside, Texas. As requested, PSI returned to the site on September 1, 2004, to collect samples of thermal system insulation concealed in garbage bags located in an abandoned control room. The survey began with an initial walkthrough of the facility in order to identify suspect ACBM and to develop a sampling strategy.

During the site inspection, the inspector subdivided the facility into eleven (11) units. These units are described in this report as Area A through Area K, as noted on the Site Vicinity Map attached and incorporated into this report.

One hundred and sixty-five (165) bulk samples were collected in areas throughout the Former Norco Refinery. Suspect materials sampled during our survey included various smokestack, storage tank, and pipe insulations; various mastics associated with pipe coverings; gasket materials; corrugated cement-asbestos panels; corrosion protection material; white insulation cloths; plaster; various 12"x12" floor tiles and associated mastics; sheet vinyl; various suspended ceiling tiles; covebase mastics; roofing materials; sink undercoating; drywall and joint compound; exterior caulk located at various smokestacks; silver weatherproofing; and bagged insulation located in an abandoned control room. The bulk samples obtained from the Former Norco Refinery were analyzed in PSI's laboratory using polarized light microscopy with dispersion staining techniques (PLM/DS). The following materials were found to contain asbestos:

### FORMER NORCO REFINERY

Homo. Area	Material Type	Material Location	Percent Asbestos
05	Gasket Material	Area A – Gaskets Found on Ground	NAD – 20% CH <sup>1</sup>
06	Cement-Asbestos Panels	Area B – Corrugated Panels at Cooling Towers	15% CH
13	White Insulation Cloth	Area C – At Patched Areas in Pipe Runs	45% CH
18	White Insulation Cloth	Area D – At Patched Areas in Pipe Runs	80% CH
25	Gasket Material	Area E – Gaskets Found on Ground	30% CH <sup>1</sup>



## INSPECTION REPORT

26	Black Roofing Mastic	Area E – Control Room Roof at Various Areas	10% CH
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### FORMER NORCO REFINERY, CONTINUED

Homo. Area	Material Type	Material Location	Percent Asbestos
32	Gasket Material	Area F – Gasket Found on Ground	20% CH <sup>1</sup>
33	Tar Flood Coat	Area F – Throughout Control Room Roof	7% CH
37	Gasket Material	Area G – At Flange of Removed Section of Piping	65% CH <sup>1</sup>
39	Sink Undercoating	Area H – Double Sink in Small Office Structure	4% CH
43	Gasket Material	Area H – At Flange of Removed Section of Piping	NAD – 15% CH <sup>1</sup>
48	Drywall & Joint Compound	Area K – Throughout Walls & Ceilings of Guard Shack	< 1% CH (PT) <sup>2</sup>

Notes: NAD = No Asbestos Detected / CH = Chrysotile / PT = Point Count

<sup>1</sup> As indicated by the analytical data, a variety of gasket materials have been utilized throughout the Former Norco Refinery. The analytical results indicate the gaskets sampled ranged from NAD to 65% Chrysotile asbestos; therefore, all discarded gaskets found on the ground and those encountered during the dismantling of the piping, smokestacks, and storage tanks should be assumed to be asbestos-containing and treated accordingly.

<sup>2</sup> The drywall associated with Homogeneous Area No. 48 was not found to contain asbestos; however, the joint compound was found to contain < 1% Chrysotile asbestos by the polarized light microscopy with dispersion staining technique. The joint compound was subsequently re-analyzed by the point count method, which verified the asbestos content as < 1% Chrysotile asbestos.

## **SUMMARY OF ACBM IDENTIFIED**

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- A. Homogeneous Area No. 05 consists of an indeterminable quantity of gasket materials presumably located throughout the joints/fittings and pipe flanges throughout Area A. In addition, discarded gaskets were also observed on the ground at various locations throughout Area A. The extents could not be feasibly determined by the inspector at the time of the survey. These materials are friable and in damaged condition. The gasket materials sampled in Area A were found to contain up to 20% Chrysotile asbestos. As indicated by the analytical data, a variety of gasket materials have been utilized throughout Area A; therefore, all discarded gaskets found on the ground and those encountered during the dismantling of the piping, smokestacks, and storage tanks should be assumed to be asbestos-containing. Due to the difficult nature of abating the gasket materials prior to the dismantling/demolition of the facility, PSI recommends that BNC Engineering, a TDH licensed asbestos abatement contractor, and a TDH licensed individual asbestos consultant coordinate efforts in order to devise a method of abatement that is in accordance with all applicable state and federal regulations. The method of abatement selected should then be incorporated into the design phase of the project.
- B. Homogeneous Area No. 06 consists of approximately 4,500 square feet of corrugated cement-asbestos panels located throughout the structural walls of the two (2) cooling towers in Area A. The roof decks, filling materials, and exhaust casings are constructed of non-suspect materials. The corrugated cement-asbestos panels are non-friable and in damaged condition. The corrugated cement-asbestos panels were found to contain 15% Chrysotile asbestos and should be removed and disposed of by a TDH licensed asbestos abatement contractor prior to any dismantling or demolition activities.
- C. Homogeneous Area No. 13 consists of approximately 100 linear feet of white insulation cloth applied to various damaged areas in the piping system at Area C. This material is friable and in damaged condition. The white insulation cloth was found to contain 45% Chrysotile asbestos and should be removed and disposed of by a TDH licensed asbestos abatement contractor prior to any dismantling or demolition activities.
- D. Homogeneous Area No. 18 consists of approximately 50 linear feet of white insulation cloth applied to various damaged areas in the piping system at Area D. This material is friable and in damaged condition. The

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## SUMMARY OF ACBM IDENTIFIED

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white insulation cloth was found to contain 80% Chrysotile asbestos and should be removed and disposed of by a TDH licensed asbestos abatement contractor prior to any dismantling or demolition activities.

- E. Homogeneous Area No. 25 consists of an indeterminable quantity of gasket materials presumably located throughout the joints/fittings and pipe flanges throughout Area E. In addition, discarded gaskets were also observed on the ground at various locations throughout Area E. The extents could not be feasibly determined by the inspector at the time of the survey. These materials are friable and in damaged condition. The gasket materials sampled in Area E were found to contain 30% Chrysotile asbestos. Based on the non-homogeneous nature of the gasket materials utilized throughout the facility, all discarded gaskets found on the ground and those encountered during the dismantling of the piping, smokestacks, and storage tanks should be assumed to be asbestos-containing. Due to the difficult nature of abating the gasket materials prior to the dismantling/demolition of the facility, PSI recommends that BNC Engineering, a TDH licensed asbestos abatement contractor, and a TDH licensed individual asbestos consultant coordinate efforts in order to devise a method of abatement that is in accordance with all applicable state and federal regulations. The method of abatement selected should then be incorporated into the design phase of the project.
- F. Homogeneous Area No. 26 consists of approximately 50 square feet of black roofing mastic applied to the base of the roof-mounted HVAC unit, the condensation drain line, vents and at various areas on the roof of the Control Room in Area E. This material is non-friable and in damaged condition. The black roofing mastic was found to contain 10% Chrysotile asbestos and should be removed and disposed of by a TDH licensed asbestos abatement contractor prior to any demolition activities.
- G. Homogeneous Area No. 32 consists of an indeterminable quantity of gasket materials presumably located throughout the joints/fittings and pipe flanges throughout Area F. In addition, discarded gaskets were also observed on the ground at various locations throughout Area F. The extents could not be feasibly determined by the inspector at the time of the survey. These materials are friable and in damaged condition. The gasket materials sampled in Area F were found to contain 20% Chrysotile asbestos. Based on the non-homogeneous nature of the

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## SUMMARY OF ACBM IDENTIFIED

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gasket materials utilized throughout the facility, all discarded gaskets found on the ground and those encountered during the dismantling of the piping, smokestacks, and storage tanks should be assumed to be asbestos-containing. Due to the difficult nature of abating the gasket materials prior to the dismantling/demolition of the facility, PSI recommends that BNC Engineering, a TDH licensed asbestos abatement contractor, and a TDH licensed individual asbestos consultant coordinate efforts in order to devise a method of abatement that is in accordance with all applicable state and federal regulations. The method of abatement selected should then be incorporated into the design phase of the project.

- H. Homogeneous Area No. 33 consists of approximately 150 square feet of tar flood coat located throughout the roof of the Control Room in Area F. This material is non-friable and in damaged condition. The tar flood coat was found to contain 7% Chrysotile asbestos and should be removed and disposed of by a TDH licensed asbestos abatement contractor prior to any demolition activities.
- I. Homogeneous Area No. 37 consists of an indeterminable quantity of gasket materials presumably located throughout the joints/fittings and pipe flanges throughout Area G. In addition, discarded gaskets were also observed on the ground at various locations throughout Area G. The extents could not be feasibly determined by the inspector at the time of the survey. These materials are friable and in damaged condition. The gasket materials sampled in Area G were found to contain 65% Chrysotile asbestos. Based on the non-homogeneous nature of the gasket materials utilized throughout the facility, all discarded gaskets found on the ground and those encountered during the dismantling of the piping, smokestacks, and storage tanks should be assumed to be asbestos-containing. Due to the difficult nature of abating the gasket materials prior to the dismantling/demolition of the facility, PSI recommends that BNC Engineering, a TDH licensed asbestos abatement contractor, and a TDH licensed individual asbestos consultant coordinate efforts in order to devise a method of abatement that is in accordance with all applicable state and federal regulations. The method of abatement selected should then be incorporated into the design phase of the project.

## **SUMMARY OF ACBM IDENTIFIED**

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- J. Homogeneous Area No. 39 consists of sink undercoating located at the double-sink in the Pump House at Area G. This material is non-friable and in damaged condition. The sink undercoating was found to contain 4% Chrysotile asbestos and should be removed and disposed of by a TDH licensed asbestos abatement contractor prior to any demolition activities.
  
- K. Homogeneous Area No. 43 consists of an indeterminable quantity of gasket materials presumably located throughout the joints/fittings and pipe flanges throughout Area H. In addition, discarded gaskets were also observed on the ground at various locations throughout Area H. The extents could not be feasibly determined by the inspector at the time of the survey. These materials are friable and in damaged condition. The gasket materials sampled in Area H were found to contain up to 15% Chrysotile asbestos. Based on the non-homogeneous nature of the gasket materials utilized throughout the facility, all discarded gaskets found on the ground and those encountered during the dismantling of the piping, smokestacks, and storage tanks should be assumed to be asbestos-containing. Due to the difficult nature of abating the gasket materials prior to the dismantling/demolition of the facility, PSI recommends that BNC Engineering, a TDH licensed asbestos abatement contractor, and a TDH licensed individual asbestos consultant coordinate efforts in order to devise a method of abatement that is in accordance with all applicable state and federal regulations. The method of abatement selected should then be incorporated into the design phase of the project.
  
- L. Homogeneous Area No. 48 consists of drywall and joint compound located throughout the walls and ceiling of the Guard Shack (Area K) near the main entrance to the facility. These materials are friable and in significantly damaged condition. The drywall was not found to contain asbestos; however, the joint compound was found to contain <1% Chrysotile asbestos by the polarized light microscopy with dispersion staining technique. The joint compound was subsequently re-analyzed by the point count method, which verified the asbestos content as <1% Chrysotile asbestos. Therefore, the drywall and joint compound located throughout the walls and ceiling of the Guard Shack can be demolished and disposed of as a non-asbestos containing material.

## RECOMMENDATIONS

### FORMER NORCO REFINERY

Homo. Area	Category	Response Action	Extent	Abatement Design Required	Estimated Abatement Cost
05	RACM	Abate	Indeterminable	Yes	\$15,000.00 <sup>1</sup>
06	II	Abate	4,500 SF	Yes	\$20,000.00
13	RACM	Abate	100 LF	Yes	\$500.00
18	RACM	Abate	50 LF	Yes	\$250.00
25	RACM	Abate	Indeterminable	Yes	N/A <sup>2</sup>
26	I	Abate	50 SF	No	\$400.00
32	RACM	Abate	Indeterminable	Yes	N/A <sup>2</sup>
33	I	Abate	150 SF	No	\$1,500.00
37	RACM	Abate	Indeterminable	Yes	N/A <sup>2</sup>
39	II	Abate	1 Each	No	\$150.00
43	RACM	Abate	Indeterminable	Yes	N/A <sup>2</sup>
					Total: \$37,800.00

*If abated as a single material, a project involving the removal of less than 260 linear feet, 160 square feet, or 35 cubic feet of non-friable asbestos-containing materials does not require a design.*

<sup>1</sup> *The inspector was not able to quantify the gasket materials located throughout the facility. The provided estimated abatement cost is an approximated lump sum fee based on similar abatement projects performed by PSI. The estimated costs may significantly vary from the actual abatement costs depending on the extents of the gasket materials located throughout the facility and the method of abatement selected.*

<sup>2</sup> *The estimated abatement cost associated with Homogeneous Area Nos. 25, 32, 37 and 43 are included in the estimated abatement cost provided for Homogeneous Area No. 05.*

Projects involving the removal of > 260 linear feet, > 160 square feet or > 35 cubic feet of asbestos-containing materials (ACM) require project design by a TDH licensed Individual Asbestos Consultant. Ten (10) days prior to the commencement of abatement of ACM, a notification must be made to the Texas Department of Health. A TDH licensed Asbestos Abatement Contractor must be used for removal of the ACM. Federal and State regulations regarding air monitoring must be considered during the course of the project. It is recommended that continuous on-site monitoring be conducted throughout the

## RECOMMENDATIONS

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project duration to document airborne fiber levels. Personal air monitoring is required throughout the project duration also. Federal and State regulations which are applicable include Occupational Safety and Health Administration 29 CFR 1926.1101, Environmental Protection Agency 40 CFR 763 and 40 CFR 61, and Texas Asbestos Health Protection Rules. Certain local regulations may also be applicable.

Category I non-friable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy. These materials should be removed if the potential for damage during renovation or demolition activities exists.

Category II non-friable ACM means any material, excluding Category I non-friable ACM, containing more than one (1) percent asbestos as determined using the methods specified in Appendix A, Subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. These materials should be removed if the potential for damage during renovation or demolition activities exists.

Regulated asbestos-containing material (RACM) means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to a powder by the forces expected to act on the material in the course of demolition or renovation operations. These materials should be removed if the potential for damage during renovation or demolition activities exists.

Friable asbestos material means any material containing more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. These materials should be removed if the potential for damage during renovation or demolition activities exists.

## **RECOMMENDATIONS**

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Due to the deteriorated condition of the stairways, platforms, and elevated walkways; certain high smokestacks and elevated storage tanks were inaccessible to the inspector. Based on the observations made by the inspector, the considerable amount of damaged materials accessible from ground level, and the homogeneous nature of the insulating materials observed throughout the facility; it is our opinion that the suspect ACBM located at the inaccessible high smokestacks and elevated storage tanks is homogeneous with the materials sampled. It is our belief that the sampling protocol employed by the inspector adequately accounts for the suspect ACBM located at the Former Norco Refinery. However, if during dismantling/demolition activities at the Former Norco Refinery suspect ACBM not previously sampled is encountered, the demolition activities should be stopped and the suspect ACBM should be sampled and analyzed for asbestos content.



## **APPENDICES**

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- Summary of Asbestos Sample Results
- Site Drawing(s)
- Laboratory Analysis
- Inspector Certification
- Glossary of Terms

## Summary of Sample Results

### Summary of Sampling Results

Project: Former Norco Refinery  
Location: FM 2725 & Bishop Road – Ingleside, TX

Project No.: 435-4A061  
Survey Date: 8/17-19/2004

<i>Homo Area</i>	<i>Material Description</i>	<i>Sample Location</i>	<i>Class.</i>	<i>F/NF</i>	<i>Samples</i>	<i>Percent Asbestos</i>
01	Pipe Insulation	Area A – At Jacketed Pipe Runs Northeast of Boiler	TSI	F	A-01 – A-03	NAD
02	Storage Tank Insulation	Area A – At Storage Tank Northeast of Boiler	TSI	F	A-04 – A-06	NAD
03	Corrosion Protection Material	Area A – Non-insulated Sections of Piping & Pipe Rack	M	NF	A-07 – A-09	NAD
04	Corrosion Protection Material	Area A – Beneath Boiler Chamber	M	NF	A-10 – A-12	NAD
05	Gasket Material	Gaskets Found on Ground	M	F	A-13 – A15	NAD – 20% CH
06	Cement-Asbestos Panels	Area B – At Cooling Towers	M	N	B-01 – B-03	15% CH
07	Plaster	Area C – At Structural Steel Support Columns	M	N	C-01 – C-03	NAD
08	Corrosion Protection Material	Area C – At Non-insulated Sections of Piping & Base of Storage Tank	M	N	C-04 – C-06	NAD
09	Pipe Insulation	Area C – At Damaged Areas in Pipe Runs	TSI	F	C-07 – C-09	NAD
10	Large Storage Tank Insulation	Area C – At Large Storage Tank Near Northwest Corner of Area	TSI	F	C-10 – C-12	NAD
11	Small Storage Tank Insulation	Area C – At Small Storage Tank Near Southeast Corner of Area	TSI	F	C-13 – C-15	NAD
12	Large Storage Tank Insulation	Area C – At Large Storage Tank Near South End of Area	TSI	F	C-16 – C-18	NAD
13	White Insulation Cloth	Area C – Damaged Areas in Pipe Runs	TSI	F	C-19 – C-21	45% CH
14	Pipe Insulation	Area D – At Damaged Areas in Pipe Runs	TSI	F	D-01 – D-03	NAD
15	Large Stack Insulation	Area D – At Large Stack Near North End of Area	TSI	F	D-04 – D-06	NAD
16	Small Stack Insulation	Area D – At Small Stacks Near Southwest Corner of Area	TSI	F	D-07 – D-09	NAD
17	Storage Tank Insulation	Area D – At Storage Tank Near Northwest Corner of Area	TSI	F	D-10 – D-12	NAD
18	White Insulation Cloth	Area D – Damaged Areas in Pipe Runs	TSI	F	D-13 – D-15	80% CH
19	Plaster	Area D – At Structural Steel Support Columns	M	N	D-16 – D-18	NAD
20	Plastic Pipe Covering & Associated Black Mastic	Area D – At Damaged Areas in Pipe Runs Near Northeast Corner of Area	M	NF	D-19 – D-21	NAD
21	Corrosion Protection Material	Area D – At Non-insulated Sections of Piping & Base of Pipe Rack	M	N	D-22 – D-24	NAD
22	12"x12" Green Floor Tile & Mastic	Area E – At Main Control Room	M	NF	E-01 – E-03	NAD/NAD

<i>Homo Area</i>	<i>Material Description</i>	<i>Sample Location</i>	<i>Class.</i>	<i>F/NF</i>	<i>Samples</i>	<i>Percent Asbestos</i>
23	2'x4' Suspended Ceiling Tile	Area E – At Main Control Room	M	F	E-04 – E-06	NAD
24	Covebase Mastic	Area E – At Main Control Room	M	NF	E-07 – E-09	NAD
25	Gasket Material	Area E - Gaskets Found on Ground	M	F	E-10 – E-12	30% CH
26	Black Roofing Mastic	Area E – At Roof of Main Control Room	M	NF	E-13 – E-15	10% CH
27	Built-up Roof Material	Area E – At Roof of Main Control Room	M	NF	E-16 – E-18	NAD
28	Pipe Insulation	Area F – At Damaged Areas in Pipe Runs	TSI	F	F-01 – F-03	NAD
29	Storage Tank Insulation	Area F – At Storage Tanks Along Northwestern Perimeter of Area	TSI	F	F-04 – F-06	NAD
30	Stack Insulation	Area F – At Fallen Stack Near South End of Area	TSI	F	F-07 – F-09	NAD
31	Black Pipe Wrap	Area F – At Pipe Run Leading to Release Valve at North End of Area	TSI	NF	F-10 – F-12	NAD
32	Gasket Material	Area F - Gaskets Found on Ground	M	F	F-13 – F-15	20% CH
33	Tar Flood Coat	Area F – At Roof of Control Room	M	NF	F-16 – F-18	7% CH
34	Pipe Insulation	Area G – At Damaged Areas in Pipe Runs	TSI	F	G-01 – G-03	NAD
35	Stack Insulation	Area G – At Base of Stack	TSI	F	G-04 – G-06	NAD
36	Gray Caulk	Area G – At Stack/Piping Interface	M	NF	G-07 – G-09	NAD
37	Gasket Material	Area G – At Flange From Removed Pipe Run	M	F	G-10 – G-12	65% CH
38	12"x12" Tan Floor Tile & Mastic	Area H – At Pump House	M	NF	H-01 – H-03	NAD/NAD
39	Sink Undercoating	Area H – At Double Sink in Pump House	M	NF	H-04 – H-06	4% CH
40	12"x12" Off-White Floor Tile & Mastic	Area H – At Control Room	M	NF	H-07 – H-09	NAD/NAD
41	2'x4' Suspended Ceiling Tile	Area H – At Control Room	M	F	H-10 – H-12	NAD
42	Tar Flood Coat	Area H – At Roof of Control Room	M	NF	H-13 – H-15	NAD
43	Gasket Material	Area H – At Flange From Removed Pipe Run & Found on Ground	M	F	H-16 – H-18	NAD – 15% CH
44	Pipe Insulation	Area I – At Long Pipe Runs Paralleling Bishop Road	TSI	F	I-01 – I-03	NAD
45	Sheet Vinyl	Area J (Across FM 2725) – At Guard Shack	M	F	J-01 – J-03	NAD
46	Black Mastic	Area J (Across FM 2725) – At Pipe Runs Stubbing Out From Ground	M	NF	J-04 – J-06	NAD
47	12"x12" Off-White Floor Tile	Area K – At Guard Shack	M	NF	K-01 – K-03	NAD <sup>1</sup>
48	Drywall & Joint Compound	Area K – At Guard Shack	M	F	K-04 – K-06	NAD/< 1% CH (PT)
49	Sprayed-on Ceiling Texture	Area K – At Guard Shack	S	F	K-07 – K-09	NAD

<i>Homo Area</i>	<i>Material Description</i>	<i>Sample Location</i>	<i>Class.</i>	<i>F/NF</i>	<i>Samples</i>	<i>Percent Asbestos</i>
50	Tar Flood Coat	Area K – At Roof of Guard Shack	M	NF	K-10 – K-12	NAD
51	Silver Tank Sealant	At UST No. 13	M	NF	13-01 – 13-03	NAD
52	Silver Tank Sealant	At UST No. 15	M	NF	15-01 – 15-03	NAD
53	Bagged Insulation	Area E – Main Control Room	TSI	F	NR-01 – NR-09	NAD

**Notes:**

Analyses performed in accordance with United States Environmental Protection Agency Appendix A, Subpart F, 40 CFR 763.1, Polarized Light Microscopy.

HA=Homogeneous Area, SF=Square Feet, LF=Linear Feet, NAD=No Asbestos Detected, NT=Not Tested, NS=Not Sampled, PT=Point Count.

Class. = Material Classification: TSI=Thermal System Insulation, S=Surfacing Material, M=Miscellaneous Material.

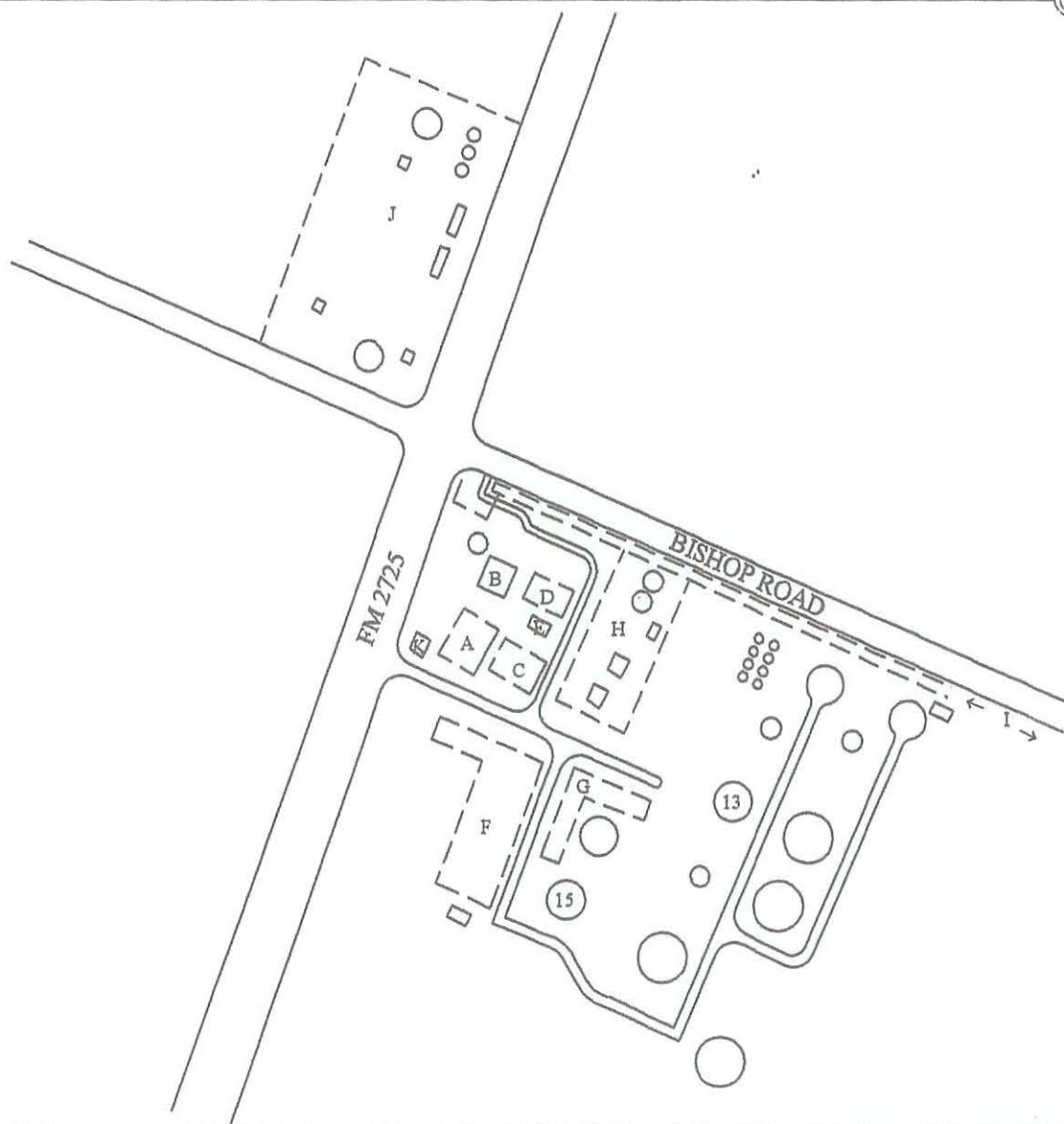
Asbestos Type: CH=Chrysotile, AM=Amosite, CR=Crocidolite, TR=Tremolite.

Cond. = Condition of Material: G=Good, D=Damaged, SD=Significantly Damaged.

<sup>1</sup> Apparent water damage in the Guard Shack has resulted in an insufficient amount of yellow mastic for sampling.

## Site Drawing

SCALE: NONE



**psi** Information  
To Build On  
Engineering • Consulting • Testing  
THREE BURWOOD LANE  
SAN ANTONIO, TEXAS 78216

SITE VICINITY  
MAP

**FORMER NORCO REFINERY**  
**FM 2725 & BISHOP ROAD**  
**INGLESIDE, TEXAS**

DATE:	09/13/04
DRAWN BY:	J. LEAL
PROJECT:	435- 4A061
DRAWING NAME:	435- 4A061

## **Photo Log of ACBM Identified**





1. View of typical gasket materials found on the ground throughout the Former Norco Refinery.



2. View of remnant gasket material located on flange at removed section of piping.





3. View of corrugated cement-asbestos panels located at cooling towers in Area B.



4. View of white insulation cloth located at various patched areas in the piping throughout the facility.





5. View of black roofing mastic located at the roof of the Main Control Room in Area E.



6. View of tar flood coat located at the roof of the Control Room in Area F.

## Laboratory Analysis

## REPORT OF BULK SAMPLE ANALYSIS FOR ASBESTOS

TESTED FOR: PSI, Inc  
Three Burwood Lane  
San Antonio, TX 78216  
Attn: Phil Rasor

Project ID: 435-4A061  
Norco Refinery

Date Received: 8/18/2004

Date Completed: 8/18/2004

Date Reported: 8/18/2004

Analyst: MS		Work Order: 0408446		Page: 1 of 2
Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
A-01	001A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	5% Synthetic Fiber 10% Fibrous Glass
A-02	002A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-03	003A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-04	004A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	5% Synthetic Fiber 10% Fibrous Glass
A-05	005A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	3% Synthetic Fiber 5% Cellulose fiber 35% Fibrous Glass
A-06	006A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	3% Synthetic Fiber 5% Cellulose fiber 35% Fibrous Glass
A-07	007A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-08	008A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-09	009A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-10	010A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

Analyst: MS

Work Order: 0408446

Page: 2 of 2

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
A-11	011A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-12	012A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
A-13	013A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Fibrous Glass 10% Cellulose fiber 30% Synthetic Fiber
A-14	014A	(1) Gray, Not Provided, Homogeneous	20% Chrysotile	None Reported
A-15	015A	(1) Green, Not Provided, Homogeneous	NO ASBESTOS DETECTED	4% Wollastonite 10% Synthetic Fiber 30% Cellulose fiber

Report Notes: (PT) Point Count Results

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

**psi** Information  
To Build On  
Engineering • Consulting • Testing

ADDITIONAL REMARKS Additional Samples with same  
job No will be submitted.

  
Your signature denotes agreement with the PSI General C



## REPORT OF BULK SAMPLE ANALYSIS FOR ASBESTOS

TESTED FOR: PSI, Inc  
Three Burwood Lane  
San Antonio, TX 78216  
Attn: Phil Rasor

Project ID: 435-4A061  
Norco Refinery

Date Received: 8/20/2004

Date Completed: 8/24/2004

Date Reported: 8/24/2004

Analyst: DA

Work Order: 0408557

Page: 1 of 5

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
B-01	001A	(1) Gray, Not Provided, Homogeneous	15% Chrysotile	None Reported
B-02	002A	(1) Gray, Not Provided, Homogeneous	15% Chrysotile	None Reported
B-03	003A	(1) Gray, Not Provided, Homogeneous	15% Chrysotile	None Reported
C-01	004A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
C-02	005A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
C-03	006A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
C-04	007A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
C-05	008A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
C-06	009A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
C-07	010A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-08	011A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-09	012A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-10	013A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-11	014A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-12	015A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-13	016A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman



Analyst: DA


Work Order: 0408557

Page: 2 of 5

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
C-14	017A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-15	018A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
C-16	019A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Fibrous Glass
C-17	020A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Fibrous Glass
C-18	021A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Cellulose fiber
C-19	022A	(1) White, Not Provided, Homogeneous	45% Chrysotile	35% Synthetic Fiber
C-20	023A	(1) White, Not Provided, Homogeneous	45% Chrysotile	35% Synthetic Fiber
C-21	024A	(1) White, Not Provided, Homogeneous	45% Chrysotile	35% Synthetic Fiber
D-01	025A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-02	026A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-03	027A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-04	028A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-05	029A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-06	030A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-07	031A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
D-08	032A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-09	033A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-10	034A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	7% Cellulose fiber 10% Fibrous Glass
D-11	035A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	7% Cellulose fiber 10% Fibrous Glass

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
D-12	036A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber 15% Cellulose fiber
D-13	037A	(1) White, Not Provided, Homogeneous	80% Chrysotile	None Reported
D-14	038A	(1) White, Not Provided, Homogeneous	80% Chrysotile	None Reported
D-15	039A	(1) White, Not Provided, Homogeneous	80% Chrysotile	None Reported
D-16	040A	(1) Off-White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-17	041A	(1) Off-White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-18	042A	(1) Off-White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-19	043A	(1) Yellow, Not Provided, Homogeneous (2) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
D-20	044A	(1) Yellow, Not Provided, Homogeneous (2) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
D-21	045A	(1) Yellow, Not Provided, Homogeneous (2) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
D-22	046A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-23	047A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
D-24	048A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
E-01	049A	(1) Blue, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
E-02	050A	(1) Blue, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
E-03	051A	(1) Blue, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
E-04	052A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	60% Fibrous Glass
E-05	053A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	60% Fibrous Glass

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
E-06	054A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	60% Fibrous Glass
E-07	055A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
E-08	056A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
E-09	057A	(1) Brown, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
E-10	058A	(1) Gray, Not Provided, Homogeneous	30% Chrysotile	None Reported
E-11	059A	(1) Gray, Not Provided, Homogeneous	30% Chrysotile	None Reported
E-12	060A	(1) Gray, Not Provided, Homogeneous	30% Chrysotile	None Reported
E-13	061A	(1) Black, Not Provided, Homogeneous	10% Chrysotile	None Reported
E-14	062A	(1) Black, Not Provided, Homogeneous	10% Chrysotile	None Reported
E-15	063A	(1) Black, Not Provided, Homogeneous	10% Chrysotile	None Reported
E-16	064A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Cellulose fiber
E-17	065A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Cellulose fiber
E-18	066A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Cellulose fiber
F-01	067A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
F-02	068A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
F-03	069A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	30% Cellulose fiber 30% Fibrous Glass
F-04	070A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
F-05	071A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	30% Cellulose fiber 30% Fibrous Glass
F-06	072A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
F-07	073A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
F-08	074A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
F-09	075A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

Analyst: DA

Work Order: 0408557

Page: 5 of 5

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)		Non-asbestos Fibers (Percent and Type)
F-10	076A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED		10% Fibrous Glass
F-11	077A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED		10% Fibrous Glass
F-12	078A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED		10% Fibrous Glass
F-13	079A	(1) Black, Not Provided, Homogeneous	20%	Chrysotile	None Reported
F-14	080A	(1) Black, Not Provided, Homogeneous	20%	Chrysotile	None Reported
F-15	081A	(1) Black, Not Provided, Homogeneous	20%	Chrysotile	None Reported
F-16	082A	(1) Black, Not Provided, Homogeneous	7%	Chrysotile	None Reported
F-17	083A	(1) Black, Not Provided, Homogeneous	7%	Chrysotile	None Reported
F-18	084A	(1) Black, Not Provided, Homogeneous	7%	Chrysotile	None Reported

Report Notes: (PT) Point Count Results

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

0408557

## CHAIN OF CUSTODY RECORD

**psi** Information  
To Build On  
Engineering • Consulting • Testing

PROJECT NAME <b>Norco Refinery</b>	REPORT TO <b>Phil Rasor</b>	INVOICE TO <b>SAME</b>
PROJECT NUMBER <b>435-4A061</b>	PROJECT MANAGER <b>Don Reynolds</b>	ADDRESS
P.O. NUMBER	ADDRESS <b>3 Burwood Lane</b>	CITY / STATE / ZIP
REQUIRED DUE DATE (MM-DD-YY) <b>Standard</b>	CITY / STATE / ZIP <b>San Antonio, TX 78216</b>	ATTENTION
SAMPLES TO LAB VIA <b>Fed-Ex</b>	TELEPHONE <b>210 342 9377</b>	TELEPHONE
NUMBER OF COOLERS/PACKAGES <b>ten (10)</b>	FAX <b>210 342 5727</b>	
	REPORT DATA VIA (email) <input type="checkbox"/> VERBAL <input type="checkbox"/> FAX	

## LABORATORY SUBMITTED TO:

☐ 25 Dubon Court  
Farmingdale, NY 11735  
516/752-1226

☐ 4820 W. 15th Street  
Lawrence, KS 66049  
800/548-7901

☐ 211 E. Imperial Hwy., Suite 201  
Fullerton, CA 92835  
714/626-8901

☐ W228 N727 Westmound Dr., Suite A  
Waukesha, WI 53186  
414/970-9022

☒ 850 Poplar Street  
Pittsburgh, PA 15220  
412/922-4000

☐ OTHER \_\_\_\_\_

RELINQUISHED BY DATE / TIME <b>Phil Rasor</b> <b>8-18-04 @ 5:30 pm</b>	ACCEPTED BY DATE / TIME <b>Phil Rasor</b> <b>8-20-04 10 am</b>	SEAL NUMBER
---	---	----------------

LABORATORY USE ONLY

SAMPLE IDENTIFICATION	DATE / TIME	AIR-A BULK-B DUST-D NOB-N PAINT-P	SOIL-S VACUUM-V WASTE-W WATER-W WIPE-WP
B-01 → B-03	8-17-04	B	
C-01 → C-21	8-17-04	B	
D-01 → D-24	8-17-04	B	
E-01 → E-18	8-17-04	B	
F-01 → F-18	8-17-04	B	
G-01 → G-12	8-18-04	B	
H-01 → H-18	8-18-04	B	
I-01 → I-23	8-18-04	B	
J-01 → J-06	8-18-04	B	
K-01 → K-12	8-18-04	B	

NUMBER OF CONTAINERS

3 X  
21 X  
24 X  
18 X  
18 X  
12 X  
18 X  
3 X  
6 X  
12 X

## PARAMETER LIST

ADDITIONAL REMARKS **Also included 13-01 → 13-03 and 15-01 → 15-03**

**Please analyze for % Asbestos PLM**

SAMPLER'S SIGNATURE

*Phil Rasor*

Your signature denotes agreement with the PSI Contract Conditions which are printed on the back side of this document

## REPORT OF BULK SAMPLE ANALYSIS FOR ASBESTOS

TESTED FOR: PSI, Inc  
Three Burwood Lane  
San Antonio, TX 78216  
Attn: Phil Rasor

Project ID: 435-4A061  
Norco Refinery

Date Received: 8/20/2004

Date Completed: 8/24/2004

Date Reported: 8/24/2004

Analyst: DA Work Order: 0408561 Page: 1 of 4

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
G-01	001A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
G-02	002A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
G-03	003A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
G-04	004A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
G-05	005A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
G-06	006A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
G-07	007A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
G-08	008A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
G-09	009A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
G-10	010A	(1) White, Not Provided, Homogeneous	65% Chrysotile	None Reported
G-11	011A	(1) White, Not Provided, Homogeneous	65% Chrysotile	None Reported
G-12	012A	(1) White, Not Provided, Homogeneous	65% Chrysotile	None Reported
H-01	013A	(1) Gray, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
H-02	014A	(1) Gray, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

Analyst: DA

Work Order: 0408561

Page: 2 of 4

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
H-03	015A	(1) Gray, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
H-04	016A	(1) Black, Not Provided, Homogeneous	4% Chrysotile	None Reported
H-05	017A	(1) Black, Not Provided, Homogeneous	4% Chrysotile	None Reported
H-06	018A	(1) Black, Not Provided, Homogeneous	4% Chrysotile	None Reported
H-07	019A	(1) White, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
H-08	020A	(1) White, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
H-09	021A	(1) White, Floor Tile, Homogeneous (2) Yellow, Mastic, Homogeneous	NO ASBESTOS DETECTED NO ASBESTOS DETECTED	None Reported None Reported
H-10	022A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	30% Cellulose fiber 30% Fibrous Glass
H-11	023A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	30% Cellulose fiber 30% Fibrous Glass
H-12	024A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	30% Cellulose fiber 30% Fibrous Glass
H-13	025A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	5% Cellulose fiber
H-14	026A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	5% Cellulose fiber
H-15	027A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	5% Cellulose fiber
H-16	028A	(1) Green, Not Provided, Homogeneous	NO ASBESTOS DETECTED	5% Wollastonite
H-17	029A	(1) Gray, Not Provided, Homogeneous	15% Chrysotile	None Reported
H-18	030A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	20% Synthetic Fiber
I-01	031A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
I-02	032A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber
I-03	033A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	10% Synthetic Fiber

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

Analyst:

DA

Work Order:

0408561

Page: 3 of 4

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
J-01	034A	(1) Tan, Not Provided, Non-Homogeneous	NO ASBESTOS DETECTED	7% Synthetic Fiber
J-02	035A	(1) Tan, Not Provided, Non-Homogeneous	NO ASBESTOS DETECTED	7% Synthetic Fiber
J-03	036A	(1) Tan, Not Provided, Non-Homogeneous	NO ASBESTOS DETECTED	10% Cellulose fiber
J-04	037A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
J-05	038A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
J-06	039A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-01	040A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-02	041A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-03	042A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-04	043A	(1) White, Sheetrock, Homogeneous (2) White, Joint Compound, Homogeneous	NO ASBESTOS DETECTED < 1% Chrysotile	None Reported None Reported
K-05	044A	(1) White, Sheetrock, Homogeneous (2) White, Joint Compound, Homogeneous	NO ASBESTOS DETECTED < 1% Chrysotile	None Reported None Reported
K-06	045A	(1) White, Sheetrock, Homogeneous (2) White, Joint Compound, Homogeneous	NO ASBESTOS DETECTED < 1% Chrysotile	None Reported None Reported
K-07	046A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-08	047A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-09	048A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
K-10	049A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	7% Cellulose fiber
K-11	050A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	7% Cellulose fiber
K-12	051A	(1) Black, Not Provided, Homogeneous	NO ASBESTOS DETECTED	7% Cellulose fiber
13-01	052A	(1) Silver, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
13-02	053A	(1) Silver, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
13-03	054A	(1) Silver, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman



Analyst: DA

Work Order: 0408561

Page: 4 of 4

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
15-01	055A	(1) Silver, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
15-02	056A	(1) Silver, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported
15-03	057A	(1) Silver, Not Provided, Homogeneous	NO ASBESTOS DETECTED	None Reported

Report Notes: (PT) Point Count Results

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PSI, Inc.



Approved Signatory  
Glynnis Bowman

0408561

## CHAIN OF CUSTODY RECORD

**psi** Information  
To Build On  
Engineering • Consulting • Testing

PROJECT NAME <i>Norco Refinery</i>	REPORT TO <i>Phil Rasor</i>	INVOICE TO <i>SAME</i>
PROJECT NUMBER <i>435-4A061</i>	PROJECT MANAGER <i>Don Reynolds</i>	ADDRESS
P.O. NUMBER	ADDRESS <i>3 Buwood Lane</i>	CITY / STATE / ZIP
REQUIRED DUE DATE (MM-DD-YY) <i>8-17-04</i>	CITY / STATE / ZIP <i>San Antonio, TX 78216</i>	ATTENTION
SAMPLES TO LAB VIA <i>Fed-Ex</i>	TELEPHONE <i>210-342-9377</i>	TELEPHONE
NUMBER OF COOLERS/PACKAGES <i>ten (10)</i>	FAX <i>210-342-5721</i>	
	REPORT DATA VIA (email) <input type="checkbox"/> VERBAL <input type="checkbox"/> FAX	<input type="checkbox"/> OVERNIGHT <input type="checkbox"/> U.S. MAIL

## LABORATORY SUBMITTED TO:

☐ 25 Dubon Court  
Farmingdale, NY 11735  
516/752-1226

☒ 850 Poplar Street  
Pittsburgh, PA 15220  
412/922-4000

☐ 4820 W. 15th Street  
Lawrence, KS 66049  
800/548-7901

☐ OTHER \_\_\_\_\_

☐ 211 E. Imperial Hwy., Suite 201  
Fullerton, CA 92835  
714/526-8901

☐ W228 N727 Westmound Dr., Suite A  
Waukesha, WI 53186  
414/970-9022

RELINQUISHED BY DATE / TIME <i>Phil Rasor</i> <i>8-19-04 @ 5:30 pm</i>	ACCEPTED BY DATE / TIME <i>Resh K. Hurd</i> <i>8-20-04 11am</i>	SEAL NUMBER
---	--	----------------

LABORATORY USE ONLY	
---------------------	--

SAMPLE IDENTIFICATION	DATE / TIME	AIR-A BULK-B DUST-D NOB-N PAINT-P	SOIL-S VACUUM-V WASTE-X WATER-W WIPE-WP
<del>B-01 → B-03</del>	<del>8-17-04</del>	<del>B</del>	
<del>C-01 → C-21</del>	<del>8-17-04</del>	<del>B</del>	
<del>D-01 → D-24</del>	<del>8-17-04</del>	<del>B</del>	
<del>E-01 → E-19</del>	<del>8-17-04</del>	<del>B</del>	
<del>F-01 → F-18</del>	<del>8-17-04</del>	<del>B</del>	
G-01 → G-12	8-18-04	B	
H-01 → H-13	8-18-04	B	
I-01 → I-03	8-18-04	B	
J-01 → J-06	8-18-04	B	
K-01 → K-12	8-18-04	B	

NUMBER OF CONTAINERS

PARAMETER LIST									
<i>Asbestos PLM</i>									
3	X								
21	X								
24	X								
18	X								
18	X								
12	X								
13	X								
3	X								
6	X								
12	X								

ADDITIONAL REMARKS *Also analyzed 13-01 → 13-03 and 15-01 → 15-03**Please analyze for Asbestos PLM*

SAMPLER'S SIGNATURE

Your signature denotes agreement with the PSI General Conditions which are printed on the back side of this document.

## REPORT OF BULK SAMPLE ANALYSIS FOR ASBESTOS

TESTED FOR: PSI, Inc  
Three Burwood Lane  
San Antonio, TX 78216  
Attn: Don Reynolds

Project ID: 435-4A061  
Norco Refinery

Date Received: 9/7/2004

Date Completed: 9/7/2004

Date Reported: 9/7/2004

Analyst: DA Work Order: 0409115 Page: 1 of 1

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
01	001A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass
02	002A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	95% Fibrous Glass
03	003A	(1) Gray, Not Provided, Homogeneous	NO ASBESTOS DETECTED	95% Fibrous Glass
04	004A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass
05	005A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass
06	006A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass
07	007A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass
08	008A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass
09	009A	(1) White, Not Provided, Homogeneous	NO ASBESTOS DETECTED	100% Fibrous Glass

Report Notes: (PT) Point Count Results

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Respectfully submitted,  
PSI, Inc.



Approved Signatory  
Glynnis Bowman

## REPORT OF BULK SAMPLE ANALYSIS FOR ASBESTOS

TESTED FOR: PSI, Inc  
Three Burwood Lane  
San Antonio, TX 78216  
Attn: Phil Rasor

Project ID: 435-4A061  
Norco Refinery  
Reference WO 0408561

Date Received: 9/13/04

Date Completed: 9/14/04

Date Reported: 9/14/04

Analyst: WD

Work Order: 0409265

Page: 1 of 1

Client ID	Lab ID (Layer)	Sample Description (Color, Texture, Etc.) <i>Analyst's Comment</i>	Asbestos Content (Percent and Type)	Non-asbestos Fibers (Percent and Type)
K-04 (43)	001A	(1) White, Joint Compound, Homogeneous	< 1% CHRYSTILE (PT)	None Reported
K-05 (44)	002A	(1) White, Joint Compound, Homogeneous	< 1% CHRYSTILE (PT)	None Reported
K-06 (45)	003A	(1) White, Joint Compound, Homogeneous	< 1% CHRYSTILE (PT)	None Reported

Report Notes: (PT) Point Count Results

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Respectfully submitted,  
PSI, Inc.

*Wayne Dickerson*  
Approved Signatory  
Wayne Dickerson



## **Inspector Certification**

TDH (★) TDH (★) TDH (★)

Texas Department of Health certifies that:

**PHIL RASOR**

**is Licensed as**

**Individual Asbestos Management  
Planner**

**License Number: 205552**

**From: 04/09/2004**

**To: 04/08/2005**



**Control No: 78463**

If found return postage guaranteed:  
Texas Department of Health  
1100 West 49th Street ZZ112-178  
Austin, Texas 78756

It is a violation of Texas Department of Health Rules and a violation of  
the Texas Penal Code Sec. 37.10 to submit any forged or fraudulent  
documents in order to obtain a license.

Es una violación de los Reglamentos del Departamento De Salud y del  
Texas Penal Code Sec. 37.10 al someter cualquier tipo de documentos  
que estén alterados o falsificados para obtener una licencia.

**Protect Texas**  
*Eduardo J. Sanchez, M.D., M.P.H.*  
Eduardo J. Sanchez, M.D., M.P.H.  
Commissioner of Health

## **Glossary of Terms**



**ABATEMENT** - The removal, repair, encapsulation, or enclosure of asbestos-containing material.

**ASBESTOS** - The asbestiform varieties of chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite.

**ASBESTOS-CONTAINING MATERIALS (ACM)** - Any material which contains more than one percent asbestos.

**CATEGORY I NON-FRIABLE ACM** - Asbestos containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one (1) percent asbestos as determined by PLM.

**CATEGORY II NON-FRIABLE ACM** - Any material, excluding Category I Non-Friable ACM, containing more than one (1) percent asbestos as determined by PLM.

**COMPETENT PERSON** - One who is capable of identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure, has the authority to take prompt corrective measures to eliminate them, and has current certification in the EPA's Asbestos Supervisors training.

**DEMOLITION** - The wrecking or taking out of any load supporting structural member and any related razing, removing, or stripping of asbestos products.

**ENCAPSULATION** - The application of a coating to friable or non-friable ACM to prevent airborne fiber release.

**ENCLOSURE** - The construction of an airtight barrier around friable or non-friable ACM to prevent airborne fiber release.

**FRIABLE ACM** - The condition of any asbestos-containing materials which when dry, may be crumbled or reduced to powder by hand pressure.

**FUNCTIONAL SPACE** - A room or specific area.

**HOMOGENEOUS AREA** - An area of surfacing material, thermal system insulation, or miscellaneous material that is uniform in texture and color and appears identical in every other respect including relative date of installation.

**HOMOGENEOUS MATERIAL** - A material, which may or may not extend through many areas, that is uniform in color and texture and appears identical in all other respects, including relative date of installation.

**MISCELLANEOUS MATERIAL** - A classification for suspect asbestos-containing material such as floor tile, ceiling tile, etc.

**OPERATION AND MAINTENANCE PLAN** - A written Plan and Procedure document describing actions to be undertaken to clean up previously released asbestos fibers, prevent future release of fibers by minimizing disturbance or damage to asbestos-containing materials, monitor the condition of the asbestos-containing materials, and retain all documentation relating to asbestos within the building.

**PHYSIOGNOMIC** - Aspect and character of an inanimate entity.

**POLARIZED LIGHT MICROSCOPY (PLM)** - Method used to estimate the percent of asbestos by volume in a bulk sample.

**REFRACTIVE** - The ability to bend light to a particular wavelength.

**REMOVAL** - Removal of the asbestos-containing material and replacement with a non-asbestos-containing material to provide the same function and fire rating, unless the removal is for the purposes of demolition.

**RENOVATION** - The modifying of any existing structure, or portion thereof.

**RESPONSE ACTION** - A method including removal, encapsulation, enclosure, repair, operation and maintenance that protects human health and the environment from friable asbestos-containing material.

**SURFACING MATERIAL** - A classification for suspect asbestos-containing material which is applied to walls, ceilings, or structural members by sprayed-on or troweled-on methods and used as fireproofing or decorative applications.

**THERMAL SYSTEM INSULATION (TSI)** - Classification for suspect asbestos-containing material which covers piping, boilers, HVAC Components, etc., to act as an insulator to prevent heat loss or gain or water condensation.